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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/157,318	09/21/98	KANEMITSU	T

QM12/0125

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EXAMINER	
COMPTON, E	
ART UNIT	**PAPER NUMBER**
3726	13

DATE MAILED: 01/25/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/157,318	Kanemitsu et al.
Examiner	**Group Art Unit**
Eric Compton	3726

☒ Responsive to communication(s) filed on *Nov 29, 2000*

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1-6 and 8* is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-6 and 8* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on *Nov 29, 2000* is ☒ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6, and 8, are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,440,796 to Deggau et al in view of US Patent 5,396,787 to Kanemitsu et al.

Deggau et al teach forming an annular member from a metal sheet by rotating a disk of metal sheet clamped between the dies (2, 2') that is not subjected to the metal working processing that the outer periphery is subjected to, pressing outer periphery of the material in a radially inward direction while rotating the metal sheet, thickening the outer periphery by pressing, protruding the outer periphery to either side of the clamped portion, and forming a peripheral wall (44) to either side of the clamped portion.

However, Deggau et al, do not teach forming the annular (disc-shaped) member to have a non-processed portion prior to pressing the outer periphery, nor pressing the outer periphery without buckling.

Kanemitsu et al disclose a method of forming an annular member. "According to the method ... , the final thickened portion is formed after the steel plate in the vicinity of the

peripheral portion thereof has been improved in strength. ***This prevents the steel plate from buckling by a pressure applied thereto at the time of forming the final thickened portion***" (col 2, lines 10-15). The annular member may be forged (ie. stamped) to have a non-processed portion, including a stepped portion, prior to the pressing step as shown in Figure 4.

Regarding claim 1, it would have been obvious to one of ordinary skill in the art, at the time of invention, to have formed the annular member having a non-processed portion prior to pressing the outer periphery in the method of Deggau et al, in light of the teachings of Kanemitsu et al, so that "even a thin steel plate can be provided at the peripheral portion thereof with a thickened portion ***without the steel plate being buckled*** (col 6, lines 3-5)."

Regarding claim 2, Figure 2b of Deggau et al shows a thickening operation such that a preliminary peripheral wall is formed having a center portion that is more outwardly swelled in the center than at the ends. The shape of the outer periphery can be considered arc-shaped.

Regarding claim 3, Figure 2b of Deggau et al shows the thickening operation which the outer periphery has bead (12) that can be considered substantially circular. Note, it is inherent that roller (21) is engaged gradually, therefore the bead begins taking on a substantially circular shape in advanced to the forming of a preliminary peripheral wall.

Regarding claim 4, Figure 2b of Deggau et al shows the metal sheet (1) held between a pair of dies (2, 2') of a rotational drive tool and pressing a forming roller (21) against the outer periphery of the metal sheet. The forming roller and the metal sheet are thereby rotated together.

Regarding claim 5, Figure 2b of Deggau et al shows a thickening operation such that a preliminary peripheral wall is formed having a center portion that is more outwardly swelled in the center than at the ends. The shape of the outer periphery can be considered arc-shaped.

Regarding claim 6, Figure 10 of Deggau et al, shows a finishing step that results in a protruding peripheral wall on either side of the clamped portion in a predetermined shape.

Regarding claim 8, Kanemitsu et al teach first forming the non-processed section into a stepped portion: "First there is prepared a steel plate **1** the peripheral portion of which has a flat section as shown in **FIG. 1A**. Generally, the steel plate **1** is a disc-like plate as shown in **FIG. 3** and has a thickness of 2.0 mm for example. Alternatively, the steel plate **1** may be a flanged cup-shaped member as shown in **FIG. 4** (col 2, lines 61-67)."

Response to Arguments

3. Applicant's arguments filed November 29, 2000, have been fully considered but they are not persuasive for the reasons cited above.

Applicant argues that Deggau et al do not disclose forming the annular member to have a non-processed portion prior to the pressing. While, Deggau et al do not specifically disclose forming a annular member to have a non-processed portion, Kanemitsu et al disclose that the annular member may be forged (ie. stamped) to the pressing step as shown in Figure 4. Clearly

Figure 4 of Kanemitsu et al shows the disc-shaped metal sheet to have a non-processed portion including a stepped portion corresponding to Applicants' stepped portion (14).

It is inherent that all cold-working processes involve localized plastic deformation of the base metal. The press rollers of both Deggau et al, Kanemitsu et al, and Applicant are deforming the metal in the vicinity of the outer periphery. Kanemitsu et al disclose "According to the method mentioned above, the final thickened portion is formed after the steel plate in the vicinity of the peripheral portion thereof has been improved in strength. ***This prevents the steel plate from buckling by a pressure applied thereto at the time of forming the final thickened portion***" (col 2, lines 10-15). Therefore, it is quite apparent that Kanemitsu et al have also recognized the buckling problems associated with the prior art and have disclosed a method to overcome such problems as the thickening process elevates the buckling problems.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

5. Official documents related to the instant application may be submitted to the Technology Center 3700 mail center by facsimile at (703) 305-3579/3580. Should Applicant desire to submit a DRAFT response to the Examiner by facsimile transmission, then Applicant should contact the Examiner at the number below for instructions concerning the transmission of DRAFT documents. Applicant is reminded to clearly mark any facsimile transmission as "DRAFT" if it is not to be considered as an official response.

6. Any inquiry concerning this communication should be directed to Examiner Eric Compton at telephone number (703) 305-0240.

ebc E.C.
January 22, 2001

S. THOMAS HUGHES
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700